

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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Ex parte JOHN H. SCHNEIDER, and  
STEVEN B. LARAMAY

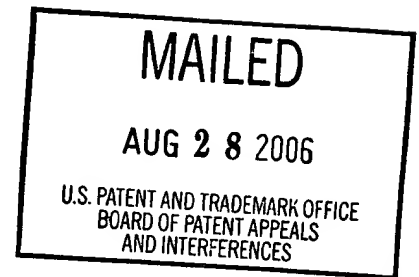
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Appeal No. 2006-1071  
Application No. 09/770,931

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ON BRIEF

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Before SCHEINER, MILLS, and GREEN, Administrative Patent Judges.

GREEN, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 16-28, 30, 34 and 35.<sup>1</sup> Claim 16, the only independent claim, is representative of the claims on appeal, and reads as follows:

16. An article of manufacture comprising a capsule and a first chemical composition, said capsule having a hollow interior and an enclosing membrane wall having an interior surface and an exterior surface, wherein said first chemical composition is enclosed within said hollow interior of said capsule;

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<sup>1</sup> Claims 16-30 and 32-35 are pending, with claims 29, 32 and 33 standing withdrawn from consideration. See Appeal Brief, page 2.

said membrane is permeable to water and aqueous solutions, but is not soluble in aqueous liquids, and includes at least a first material comprised of a polyurethane-vinyl polymer dispersion prepared by the simultaneous polymerization of a vinyl monomer and chain extension of an isocyanate-terminated polyurethane pre-polymer in the presence of water to thereby form a urethane/vinyl hybrid polymer; and

said first chemical composition is comprised of a solid, water-soluble chemical composition which is not reactive with, soluble in or a solvent for said membrane.

The examiner relies upon the following references:

Walles et al. (Walles)	4,756,844	Jul. 12, 1988
Vijayendran et al. (Vijayendran)	5,173,526	Dec. 22, 1992
Mitchell et al. (Mitchell)	5,741,433	Apr. 21, 1998
Garcia et al. (Garcia)	6,436,540	Aug. 20, 2002

Claims 16, 17 and 21 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Mitchell and Vijayendran. Claims 18, 20, 23, 35 and 35 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Mitchell, Vijayendran and Walles, and claims 19, 22, 24-28 and 30 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Mitchell, Vijayendran, Walles and Garcia. After careful review of the record and consideration of the issues before us, we reverse the rejection over Mitchell and Vijayendran. Because we reverse that rejection, and all the remaining rejections are based on that combination, we reverse the remaining rejections as well.

### BACKGROUND

According to the specification, chemical compositions for which it is useful to have controlled release from a capsule include medicines, pesticides, herbicides, cosmetics, laundry products, pigments, polymerization initiators, cross linking agents and viscosity reducing agents. See id. at 2. Mechanisms that have been used to effect said release have included the use of “external crushing forces applied to the confining material, internal rupture and bursting forces applied to the confining material, disintegration of the confining material and diffusion or permeation of liquid through the confining material.” Id.

The present invention is drawn to a capsule comprising “a hollow interior and an enclosing wall which is permeable to water or an aqueous solution,” wherein “[a] first, water-soluble, chemical composition is enclosed, that is, encapsulated, in the hollow interior of the capsule by the wall of the capsule.” Id. at 5. The permeable wall of the capsule is comprised a urethane/vinyl hybrid polymer. See id.

In operation, an aqueous liquid in contact with the exterior surface of the capsule diffuses through the wall of the capsule, where it contacts and dissolves the encapsulated first chemical composition. See id. at 12. The solution thus formed in the capsule then gradually diffuses from the interior of the capsule to the exterior of the capsule, which “requires an extended period of time to be completed to thereby avoid release of all of the first chemical composition over a

very short span of time.” Id. “The capsule remains intact during the entire diffusion process.” Id. at 13.

### DISCUSSION

“A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, all facts must be considered. The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not, because it may doubt that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in its factual basis. To the extent the Patent Office rulings are so supported, there is no basis for resolving doubts against their correctness. Likewise, we may not resolve doubts in favor of the Patent Office determination when there are deficiencies in the record as to the necessary factual bases supporting its legal conclusion of obviousness.” In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968) (emphasis in original).

In the rejection of claims 16, 17 and 21 under 35 U.S.C. § 103(a) as being obvious over Mitchell and Vijayendran, Mitchell is relied upon for teaching “a controlled-release supplement additive (“SCA”) comprising a core containing the supplement coolant additive active component and a polymeric coating material encapsulating said core.” Examiner’s Answer, page 3. When in use, water or water vapor diffuses through the polymeric coating and dissolves the water-

soluble SCA encapsulated therein, and the reference teaches that polymeric coating materials having good moisture barrier properties are preferred, as they reduce the rate of dissolution of the SCA composition core, providing more constant, controlled release. See id. Mitchell is also relied upon for teaching that “water-insoluble film-forming polymers are suitable for the coating material.” Id. The examiner also points to Tables 2 and 3 of Mitchell, in which different coating polymers were tested.

The examiner acknowledges that “Mitchell fails to teach polyurethane/vinyl hybrid polymer as recited in the instant invention.” Id. at 4.

Vijayendran is cited for teaching the claimed polyurethane/vinyl hybrid polymer, and its use as a protective coating material.

The rejection concludes:

Given the general teaching in Mitchell that it is well known in the art to employ water-insoluble film-forming polymers having moisture barrier property to produce an encapsulated pellet or tablet having a water permeable membrane to reduce the rate of the release of the active ingredient, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have looked to the prior art such as Vijayendran for specific water-insoluble film forming polymers to produce a similar product with constant release of the active ingredient in aqueous environment.

Id.

Appellants contend that Vijayendran teaches a flexible coating made from a urethane/vinyl hybrid polymer dispersion that will protect a substrate, such as paper, metals, plastic and wood. See Appeal Brief, page 7. Appellants assert that “protect” cannot be interpreted as “permit[ting] a solvent to diffuse through

the flexible surface and dissolve the substrate.” Id. According to appellants, coating as used by Vijayendran should be interpreted as not allowing water or solvent to pass through the flexible coating to contact the substrate. See id.

The examiner asserts “that the collective teaching[s, sic] of Mitchell and Vijayendran provide the expectation that the Vijayendran vinyl/polyurethane polymer would be suitable as the coating material of the instant invention or the Mitchell invention, which would provide the sufficient moisture barrier to provide both protection of the core material against the aqueous environment and the permeability which is necessary to achieve the constant controlled release.”

Examiner’s Answer, page 7.

We agree with appellants. Vijayendran teaches that their invention “provides a method for preparing aqueous polyurethane/vinyl polymer dispersion[s] which are especially suited for making coated paper substrates having a good balance of protection from solvents, corrodants, abrasion and good [sic] and flexibility.” Col. 11, lines 30-34. The coating is applied to the paper substrate “by conventional flexographic or gravure methods,” and may also be applied to other substrates such as metals, i.e., steel and aluminum, plastics, i.e., high impact polystyrene, polycarbonate, Mylar polyester and polypropylene and wood. See id. at Col. 2, lines 48-56.

Thus, there is nothing in either Vijayendran or Mitchell that would suggest to one of ordinary skill in the art to use the polyurethane/vinyl polymer of Vijayendran as the encapsulating material in the invention of Mitchell. Mitchell

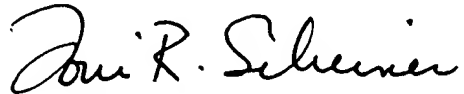
requires water to diffuse through the polymeric coating material into the interior of the capsule, where it acts as a solvent, where an aqueous solution is formed, which then diffuses back through the polymeric coating. See Mitchell, Col. 5, lines 50-56. Vijayendran, however, wants to protect the substrate being coated, such as paper, from solvent. We can find nothing in either reference, and the examiner points to nothing, that demonstrates that the coating of Vijayendran is permeable to water, and thus could be used as the encapsulating material of Mitchell. Thus, the examiner has not met his burden of setting forth a prima facie case of obviousness, and we are compelled to reverse the rejection.

As to the rejection of claims 18, 20, 23, 35 and 35 under 35 U.S.C. § 103(a) as being obvious over the combination of Mitchell, Vijayendran and Walles, and the rejection of claims 19, 22, 24-28 and 30 under 35 U.S.C. § 103(a) as being obvious over the combination of Mitchell, Vijayendran, Walles and Garcia, those rejections must also be reversed because they are based on the rejection over the combination of Mitchell and Vijayendran.

CONCLUSION

Because the examiner has set forth a prima facie case of obviousness, all of the rejections of record are reversed.

REVERSED



Toni R. Scheiner  
Administrative Patent Judge



Demetra J. Mills  
Administrative Patent Judge



Lora M. Green  
Administrative Patent Judge

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